

### **AMENDMENTS TO THE CLAIMS**

This Listing of Claims will replace all prior versions, and listings, of Claims in the Application:

#### **Listing of Claims:**

Claim 1 (Currently Amended): A modified lithium ion polymer battery, comprising a positive electrode sheet **a**, a negative electrode sheet **b**, and a separation membrane **c**, wherein said positive and negative electrode sheets ~~a and b~~ are formed by blending a binder with positive electrode powder or negative electrode powder and coating the resulting blend on a copper foil or an aluminum foil used as the collector, wherein said binder is prepared from the following three components, proportions being a percentage of weight of said binder:

(a) 0.5 wt%~95 wt% of polyvinylidene fluoride;

(b) 0.1wt%~90 wt% of a modified polyacrylates;

(c) 0.1 wt%~85 wt% of a modified polyethylene; said modified polyacrylates and said modified polyethylene each having a molecular weight in the range of 10,000 to 300,000 and 50%~90% amorphous phase, wherein said positive and negative electrode sheets are laminated with a separation membrane to form a overlap sheet or roll in a an alternative and isolation manner; electrode leads of said positive and

negative collectors are welded, ~~respectively;~~ together and the whole laminate is assembled with an aluminum plastic membrane.

Claim 2 (Previously Presented): A polymer battery as in claim 1, wherein said separation membrane is a micro-porous polypropylene film.

Claim 3 (Currently Amended): A polymer battery as in claim ~~2~~ 1, wherein said separation membrane is produced from polymethyl methacrylate and polyvinylidene fluoride.

Claim 4 (Currently Amended): A polymer battery as in claim 1, wherein said modified polyacrylates is a substance made by co-polymerizing more than 60 wt% of a carboxylic acid or carboxylic acid ester as the major constituent consisting of an acrylate monomer and ~~0~~ 0.1~40% of a second constituent being butadiene, into a copolymer, and subsequently neutralizing part or all of the carboxylic groups on said copolymer.

Claim 5 (Currently Amended): A polymer battery as in claim 1, wherein said active material used in the positive electrode of the modified lithium ion polymer battery according to the invention is a compositive oxide of lithium and transition metals, such as  $\text{LiCoO}_2$ ,  $\text{LiMn}_2\text{O}_4$ ,  $\text{LiNiO}_2$ , and  $\text{LiNi}_x\text{Co}_{1-x}\text{O}_2$  ~~and the like~~; and the active materials used in the negative electrode of the modified lithium ion polymer battery according to the invention is carbon powder, such as mesophase carbon micro-beads (MCMB), natural graphite and ~~modified products~~ combinations thereof, petroleum coke and ~~modified~~ petroleum coke-containing products ~~thereof~~, as well as hard carbon materials.

Claim 6 (Currently Amended): A polymer battery as in claim 1, wherein ~~said~~ an electrolyte used in said battery is prepared by mixing a lithium salt selected from the group consisting of  $\text{LiPF}_6$ ,  $\text{LiAsF}_6$ ,  $\text{LiClO}_4$ ,  $\text{LiN}(\text{CF}_3\text{SO}_2)_2$ ,  $\text{LiBF}_4$ ,  $\text{LiSbF}_6$ ,  $\text{LiCF}_3\text{SO}_3$  and the like; an organic solvent selected from the group consisting of ethylene carbonate, propylene carbonate, dimethyl carbonate, diethoxyethane, diethyl carbonate, dimethoxyethane, and dipropyl carbonate ~~and the like; and a co-polymer~~.

Claim 7 (Original): A polymer battery as in claim 6, wherein the concentration of said lithium salt in said electrolyte is 0.1~2 M.